AGY’s VeTron™ high performance glass roving answers the composites industry’s need for a vinyl ester compatible reinforcement with higher performance than regular E-Glass and lower costs than aramid and carbon fibers. AGY’s global network of people and facilities are ready to help you develop innovative solutions to your most difficult reinforcement challenges.

**Product Application**
This product provides ease of processing as well as unrivaled structural performance and is used wherever customers need high performance reinforcement at an affordable price in electronics, marine and alternative energy applications such as:
- Fiber optic cables
- Windmill blades
- Racing boats

**Product Solutions**
VeTron provides superior modulus and strength for the most demanding applications. VeTron allows 15% more rigidity and 35% more strength than E-Glass at a lower price than S-2 Glass® fiber. In addition to greater mechanical performance, VeTron features a lower density of less than 2.5 g/cm³ (2497 lb/ft³) superior acid resistance to E-CR glass with good electrical properties.

**Product Description**
VeTron products are high performance glass single end roving with vinyl ester compatible sizing suitable for pultrusion, weaving and filament winding. VeTron rovings consist of numerous P-filament (18μ) or V-filament (26μ) continuous glass strands, gathered without mechanical twist in a single bundle.

**Features** | **Benefits**
--- | ---
Zero catenary smooth run-out under a variety of condition and speeds | Excellent processing with low fiber
25-35% higher strength than E-Glass composites at the same fiber volume fraction, 10-15% higher modulus | Higher performance, lighter products
VeTron glass rovings have a specially engineered size that exhibits outstanding strength retention after water boil tests | Resistant to water damage
Quick wet-out | The VE1 sizing system allows rapid, uniform wet-out of the entire strand in vinyl ester and polyester resins. This allows the processor to optimize part fabrication time
VeTron high performance glass has better acid, alkali and temperature resistance than regular glass fiber | Durable
VeTron high performance glass is boron-free | Environmentally friendly
The high performance technology manufacturing process features state-of-the-art control systems allowing unusually tight control of linear density (tex/yield) | Consistent product performance and reliability
D ISCLAIM ER O F L IABILITY

This data is offered solely as a guide in the selection of a reinforcement. The information contained in this publication is based on actual laboratory data and field test experience. We believe this information to be reliable, but do not guarantee its applicability to the user’s process or assume any liability arising out of its use or performance. The user, by accepting the products described herein, agrees to be responsible for thoroughly testing any application to determine its suitability before committing to production. It is important for the user to determine the properties of its own commercial compounds when using this or any other reinforcement.

B ECAU SE O F N U M ERO U S FA CTO RS A FFECT IN G  RESU LTS, W E M A KE N O  W A RRA NTY O F A N Y KIN D, EXPRESS O R IM PLIED, IN CLU DING  TH OSE O F M ERCH A NTA B I LITY A N D  FITN ESS FO R A  PA RTCU LA R PU RPO SE.

STATEM EN T S IN  TH IS D O CU M EN T SH A LL N O T B E CO N STRU ED  A S REPRESEN TATIO N S O R W A RRA N TIES O R A S IN D U CEM EN T S TO  IN FRIN G E A N Y PATEN T O R VIO LATE A N Y LAW , SA FE TY CO D E, O R IN SU RA NCE REG U LATIO N .

VeTron is a trademark of AGY. S-2 Glass is a registered trademark of AGY.

Additional References

Customer acceptance standard: RF-TBD

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<table>
<thead>
<tr>
<th>Available Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>** Linear density TEX (g/km) **</td>
</tr>
<tr>
<td>VE-1-AB-1200X</td>
</tr>
<tr>
<td>VE-1-AB-2400</td>
</tr>
</tbody>
</table>

Typical Composite Properties

VARTM laminate of 24 osy PW fabric in vinyl ester resin system

<table>
<thead>
<tr>
<th>** O° Tension to ASTM D638 Type III **</th>
<th>** E-Glass Standard **</th>
<th>** VeTron VE-1-AB-2400 **</th>
<th>** VeTron Premium Over E-Glass **</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average strength, ksi (MPa)</td>
<td>55 (379)</td>
<td>91 (626)</td>
<td>65%</td>
</tr>
<tr>
<td>Average modulus, msi (GPa)</td>
<td>3.7 (25.7)</td>
<td>5.0 (34.0)</td>
<td>34%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>** O° Tension to SACMA 1R-94 (modified) **</th>
<th>** Average strength, ksi (MPa) **</th>
<th>** Average modulus, msi (GPa) **</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average strength, ksi (MPa)</td>
<td>59 (409)</td>
<td>76 (527)</td>
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<tr>
<td>Average modulus, msi (GPa)</td>
<td>4.4 (30.1)</td>
<td>5.6 (39.0)</td>
</tr>
</tbody>
</table>

Packaging

<table>
<thead>
<tr>
<th>** Descriptions **</th>
<th>** 4044 Tubeless **</th>
<th>** 5044 Tubeless **</th>
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</thead>
<tbody>
<tr>
<td>Outside diameter</td>
<td>22.0</td>
<td>TBD</td>
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<tr>
<td>Inside diameter</td>
<td>16.2</td>
<td>16.2</td>
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<tr>
<td>Traverse</td>
<td>26.0</td>
<td>26.0</td>
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<tr>
<td>Avg. package weight</td>
<td>6.8 kg</td>
<td>15 lb</td>
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<tr>
<td>Carton Type</td>
<td>Carton</td>
<td>Carton</td>
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<tr>
<td>Packages/pallet</td>
<td>60</td>
<td>21</td>
</tr>
<tr>
<td>Pallets/typical truckload</td>
<td>45</td>
<td>TBD</td>
</tr>
<tr>
<td>Carton Dimensions</td>
<td>Metric (cm)</td>
<td>English (in)</td>
</tr>
<tr>
<td>Length</td>
<td>110</td>
<td>43.3</td>
</tr>
<tr>
<td>Width</td>
<td>110</td>
<td>43.3</td>
</tr>
<tr>
<td>Height with pallet</td>
<td>94</td>
<td>37.0</td>
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